

IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1. (Currently Amended) An image processing apparatus comprising:  
input means for inputting an image of one of a plurality of image types;  
image processing means for generating a recording image data based on the  
input image, the image processing means being capable of generating first recording image  
data for recording the image on a recording material at a predetermined recording density,  
and second recording image data for recording the image on a recording material at a  
recording density lower than that of the first recording image data, by reducing the number  
of recording dots;

selecting means for use of the operator in selecting a recording mode from  
among a first recording mode, for recording the first recording image on a recording  
material at a predetermined recording density data, and a second recording mode, for  
recording the second recording image on the recording material at a recording density lower  
than that of the first recording mode data;

determining means for determining if the input image is a predetermined  
image type; and

control means for changing to the first recording mode, when the second  
recording mode is selected by said selecting means operator and said determining means  
determines that the input image is the predetermined image type suitable for recording by  
the first recording mode.

2. (Currently Amended) An image processing apparatus according to Claim 1, further comprising a recording means for recording the image in the first recording [[mode]] image data or the second recording [[mode]] image data, according to the mode being used.

3. (Original) An image processing apparatus according to Claim 1, wherein said input means inputs one-pixel binary image data.

4. (Canceled).

5. (Original) An image processing apparatus according to Claim 3, wherein said input means inputs one of binary data received from another communication apparatus and binary data obtained by binarizing multi-valued image data obtained by reading a subject copy.

6. (Currently Amended) An image processing apparatus according to Claim 1, wherein the predetermined image type is a color image, and said determining means determines whether the input image is a monochrome image or a color image; and said control means changes to the first recording mode, when the second recording mode is selected by said selecting means operator, and said determining means determines that the input image is a color image.

7. (Currently Amended) An image processing apparatus according to Claim 1, wherein when the input image type is a monochrome image, and said determining means determines whether the monochrome image is a character image or a halftone image; and

said control means changes to the first recording mode, when the second recording mode is selected by ~~said selecting means~~ the operator, and said determining means determines that the monochrome image is a halftone image.

8. (Original) An image processing apparatus according to Claim 1, wherein said input means inputs an image having a plurality of pages; said determining means determines the image type of the input image in units of a page; and  
said control means controls the recording mode in units of a page.

9. (Currently Amended) An image processing apparatus comprising:  
input means for inputting an image of one of a plurality of image types;  
image processing means for generating recording image data based on the input image, the image processing means being capable of generating first recording image data for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

selecting means for selecting a recording mode from among a first recording mode, for unconditionally decimating the image input by said input means and recording the first recording image data on a recording material, a second recording mode, for referring to images of pixels surrounding the image input by said input means, decimating the image, and recording the second recording image data on the recording material, and a third recording mode, for recording the third recording image input by said input means data on the recording material, the third image data being obtained from the input image without decimating the image;

determining means for determining if the input image is a predetermined image type; and

control means for changing to the third recording mode, when one of the first and second recording modes is selected by ~~said selecting means~~, and said determining means determines that the input image is the predetermined image type suitable for recording in the third recording mode.

10. (Currently Amended) An image processing apparatus according to Claim 9, further comprising a recording means for recording the image in the first, second, or third recording [[mode]] image data.

11. (Original) An image processing apparatus according to Claim 9, wherein said input means inputs one-pixel binary image data.

12. (Original) An image processing apparatus according to Claim 11, wherein said input means inputs one of binary data received from another communication apparatus and binary data obtained by binarizing multi-valued image data obtained by reading a subject copy.

13. (Currently Amended) An image processing apparatus according to Claim 9, wherein the predetermined image type is a color image, and said determining means determines whether the input image is a monochrome image or a color image; and said control means changes to the third recording mode, when the first or the second recording mode is selected by ~~said selecting means~~, and said determining means determines that the input image is a color image.

14. (Original) An image processing apparatus according to Claim 9, wherein said input means inputs an image having a plurality of pages; said determining means determines the image type of the input image in units of a page; and said control means controls the recording mode in units of a page.

15. (Currently Amended) An image processing apparatus comprising:  
input means for inputting an image of one of a plurality of image types;  
image processing means for generating recording image data based on the input image, the image processing means being capable of generating first recording image data for recording the image on a recording material at a predetermined recording density,

and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

selecting means for use of an operator in selecting a recording mode from among a first recording mode, for unconditionally decimating the image input by said input means and recording the first recording image data on a recording material, a second recording mode, for referring to images of pixels surrounding the image input by said input means, decimating the image, and recording the second recording image on the recording material, and a third recording mode, for recording the third recording image input by said input means data on the recording material without decimating the image;

determining means for determining the image type of the input image; and control means for changing the recording mode selected by said selecting means in accordance with a determination result by said determining means[[:]],

wherein said determining means determines whether the input image is a monochrome image or a color image, and if a monochrome image, whether the monochrome image is a character image or a halftone image[[:]], and said control means changes to the second recording mode, when the first recording mode is selected by said selecting means, and said determining means determines that the monochrome image is a halftone image.

16. (Currently Amended) An image processing method comprising:  
an inputting step, of inputting an image of one of a plurality of image types;

an image processing step, of generating recording image data based on the input image, the image processing step including generating any of first recording image data, for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

a selecting step, of an operator selecting a recording mode from among a first recording mode, for recording the first recording image on a recording material at a predetermined recording density data, and a second recording mode, for recording the second recording image on the recording material at a recording density lower than that of the first recording mode data;

a determining step, of determining if the input image is a predetermined image type; and

a controlling step, of changing to the first recording mode, when the second recording mode is selected in said selecting step by the operator, and it is determined in said determining step determines that the input image is the predetermined image type suitable for recording by the first recording mode.

17. (Currently Amended) An image processing method according to Claim 16, further comprising a recording step, of recording the image in the first or the second recording [[mode]] image data.

18. (Previously Presented) An image processing method according to Claim 16, wherein said inputting step includes inputting one-pixel binary image data.

19. (Original) An image processing method according to Claim 16, wherein the second recording mode is for decimating and recording the input image.

20. (Previously Presented) An image processing method according to Claim 18, wherein said inputting step includes inputting binary data received from another communication apparatus or binary data obtained by binarizing multi-valued image data obtained by reading a subject copy.

21. (Currently Amended) An image processing method according to Claim 16, wherein the predetermined image type is a color image, and said determining step includes determining whether the input image is a monochrome image or a color image; and

    said controlling step includes changing to the first recording mode, when the second recording mode is selected in ~~said selecting step~~, and it is determined in said determining step that the input image type is a color image.

22. (Currently Amended) An image processing method according to Claim 16, wherein the input image type is a monochrome image, and said determining step includes determining whether the monochrome image is a character image or a halftone image; and

said controlling step includes changing to the first recording mode, when the second recording mode is selected in said selecting step by the operator, and it is determined in said determining step that the monochrome image is a halftone image.

23. (Previously Presented) An image processing method according to Claim 16, wherein:

    said inputting step includes inputting an image having a plurality of pages;  
    said determining step includes determining the image type of the input image in units of a page; and  
    said controlling step includes controlling the recording mode in units of a page.

24. (Currently Amended) An image processing method comprising:  
    an inputting step, of inputting an image of one of a plurality of image types;  
    an image processing step, of generating recording image data based on the input image, the image processing step including generating any of first recording image data for recording the image on a recording material at a predetermined recording density,  
and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

    a selecting step, of selecting a recording mode from among a first recording mode, for unconditionally decimating the image input in said inputting step and recording the first recording image data on a recording material, a second recording mode, for

~~referring to images of pixels surrounding the image input in said inputting step, decimating the image, and recording the second recording image data on the recording material, and a third recording mode, for recording the third recording image input in said inputting step without decimating the image data;~~

a determining step, of determining if the image is a predetermined image type; and

a controlling step, of changing to the third recording mode, when one of the first and second recording modes is selected in ~~said selecting step~~, and it is determined in said determining step that the input image is the predetermined image type suitable for recording in the third recording mode.

25. (Currently Amended) An image processing method according to Claim 24, further comprising a recording step, of recording ~~the image in~~ the first, second, or third recording [[mode]] image data.

26. (Previously Presented) An image processing method according to Claim 24, wherein said inputting step includes inputting one-pixel binary image data.

27. (Previously Presented) An image processing method according to Claim 26, wherein said inputting step includes inputting binary data received from another communication apparatus or binary data obtained by binarizing multi-valued image data obtained by reading a subject copy.

28. (Currently Amended) An image processing method according to Claim 24, wherein the predetermined image type is a color image, and said determining step includes determining whether the input image is one of a monochrome image and a color image; and

said controlling step includes changing to the third recording mode, when one of the first and second recording modes is selected ~~in said selecting step~~, and it is determined in said determining step that the input image is a color image.

29. (Previously Presented) An image processing method according to Claim 24, wherein:

said inputting step includes inputting an image having a plurality of pages;  
said determining step includes determining the image type of the input image in units of a page; and  
said controlling step includes controlling the recording mode in units of a page.

30. (Currently Amended) An image processing method comprising:  
an inputting step, of inputting an image of one of a plurality of image types;  
an image processing step, of generating recording image data based on the input image, the image processing step including generating any of first recording image data for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a

recording density lower than that of the first recording image data, by reducing the number of recording dots;

a selecting step, of selecting a recording mode from among a first recording mode, for ~~unconditionally decimating the image input in said inputting step~~ and recording the first recording image data on a recording material, a second recording mode, for referring to images of pixels surrounding the image input in ~~said inputting step~~, decimating the image, and recording the second recording image data on the recording material, and a third recording mode, for recording the third recording image input in ~~said inputting step~~ ~~on the recording material without decimating the image data~~;

a determining step, of determining the image type of the input image; and  
a controlling step, of changing the recording mode selected in said selecting step in accordance with a determination result obtained in said determining step,

wherein said determining step includes determining whether the input image is a monochrome image or a color image, and if a monochrome image, whether the monochrome image is a character image or a halftone image, and

wherein said controlling step includes changing to the second recording mode, when the first recording mode is selected in said selecting step, and it is determined in said determining step that the monochrome image is a halftone image.

31. (Currently Amended) A computer readable medium having recorded thereon executable codes for implementing a computer implementable image processing method comprising:

an inputting step, of inputting an image of one of a plurality of image types;

an image processing step, of generating recording image data based on the input image, the image processing step includes generating any of first recording image data for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

a selecting step, of an operator selecting a recording mode from among a first recording mode, for recording the first recording image on a recording material at a predetermined recording density data, and a second recording mode, for recording the second recording image on the recording material at a recording density lower than that of the first recording mode data;

a determining step, of determining if the input image is a predetermined image type; and

a controlling step, of changing to the first recording mode, when the second recording mode is selected ~~in said selecting step by the operator~~, and it is determined in said determining step that the input image is the predetermined image type suitable for recording by the first recording mode.

32. (Currently Amended) A computer readable medium according to Claim 31, the method further comprising a recording step, of recording the image in the first or the second [[mode]] recording image data.

33. (Previously Presented) A computer readable medium according to Claim 31, wherein said inputting step includes inputting one-pixel binary image data.

34. (Original) A computer readable medium according to Claim 31, wherein the second recording mode is for decimating and recording the input image.

35. (Previously Presented) A computer readable medium according to Claim 33, wherein said inputting step includes inputting one of binary data received from another communication apparatus and binary data obtained by binarizing multi-valued image data obtained by reading a subject copy.

36. (Currently Amended) A computer readable medium according to Claim 31, wherein the predetermined image type is a color image, and said determining step includes determining whether the input image is a monochrome image or a color image; and

    said controlling step includes changing to the first recording mode, when the second recording mode is selected in ~~said selecting step~~, and it is determined in said determining step that the input image type is a color image.

37. (Currently Amended) A computer readable medium according to Claim 31, wherein the input image type is a monochrome image, and said determining step includes determining whether the monochrome image is a character image or a halftone image; and

said controlling step includes changing to the first recording mode, when the second recording mode is selected in ~~said selecting step by operator~~, and it is determined in said determining step that the monochrome image is a halftone image.

38. (Previously Presented) A computer readable medium according to Claim 31, wherein:

said inputting step includes inputting an image having a plurality of pages;  
said determining step includes determining the image type of the input image in units of a page; and  
said controlling step includes controlling the recording mode in units of a page.

39. (Currently Amended) A computer readable medium having recorded thereon executable codes for implementing a computer implementable image processing method comprising:

an inputting step, of inputting an image of one of a plurality of image types;  
an image processing step, of generating recording image data based on the input image, the image processing step including generating any of first recording image data for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

a selecting step, of selecting a recording mode from among a first recording mode, for unconditionally decimating the image input in said inputting step and recording the first recording image data on a recording material, a second recording mode, for referring to images of pixels surrounding the image input in said inputting step, decimating the image, and recording the second recording image data on the recording material, and a third recording mode, for recording the third recording image input in said inputting step without decimating the image data;

a determining step, of determining if the image is a predetermined image type; and

a controlling step, of changing to the third recording mode, when one of the first and second recording modes is selected in said selecting step, and it is determined in said determining step that the input image is the predetermined image type suitable for recording in the third recording mode.

40. (Currently Amended) A computer readable medium according to Claim 39, further comprising a recording step, of recording the image in the first, second, or third recording [[mode]] image data.

41. (Previously Presented) A computer readable medium according to Claim 39, wherein said inputting step includes inputting one-pixel binary image data.

42. (Previously Presented) A computer readable medium according to Claim 39, wherein said inputting step includes inputting binary data received from another

communication apparatus or binary data obtained by binarizing multi-valued image data obtained by reading a subject copy.

43. (Currently Amended) A computer readable medium according to Claim 39, wherein the predetermined image type is a color image, and said determining step includes determining whether the input image is a monochrome image or a color image; and

said controlling step includes changing to the third recording mode, when the first or the second recording mode is selected ~~in said selecting step~~, and it is determined in said determining step that the input image is a color image.

44. (Currently Amended) A computer readable medium according to Claim 39, wherein:

said inputting step ~~include~~ includes inputting an image having a plurality of pages;

said determining step includes determining the image type of the input image in units of a page; and

said controlling step includes controlling the recording mode in units of a page.

45. (Currently Amended) A computer readable medium having recorded thereon executable codes for implementing a computer implementable image processing method comprising:

an inputting step, of inputting an image of one of a plurality of image types; an image processing step, of generating recording image data based on the input image, the image processing step including generating any of first recording image data for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

a selecting step, of selecting a recording mode from among a first recording mode, for ~~unconditionally decimating the image input in said inputting step~~ and recording the first recording image data on a recording material, a second recording mode, for referring to images of pixels surrounding the image input in said inputting step, decimating the image, and recording the second recording image data on the recording material, and a third recording mode, for recording the third recording image input in said inputting step on the recording material without decimating the image data;

a determining step, of determining the image type of the input image; and  
a controlling step, of changing the recording mode selected in said selecting step in accordance with a determination result obtained in said determining step,

wherein said determining step includes determining whether the input image is a monochrome image or a color image, and if a monochrome image, whether the monochrome image is a character image or a halftone image, and

wherein said controlling step includes changing to the second recording mode, when the first recording mode is selected in said selecting step, and it is determined in said determining step that the monochrome image is a halftone image.

46. (Currently Amended) An image processing apparatus comprising:  
input means for inputting an image that is a color image or a monochrome  
image;

image processing means for generating a recording image data based on the  
input image, the image processing means being capable of generating first recording image  
data for recording the image on a recording material at a predetermined recording density,  
and of generating second recording image data for recording the image on a recording  
material at a recording density lower than that of the first recording image data, by reducing  
the number of recording dots;

selecting means for use of an operator in selecting a recording mode from  
among a normal recording mode, for recording the first recording image on a recording  
material at a predetermined recording density data, and a decimation recording mode, for  
recording the second recording image on the recording material at a recording density lower  
than that of the normal recording mode data;

determining means for determining if the input image is a color image or a  
monochrome image; and

control means for changing to the normal recording mode, when the  
decimation recording mode is selected by said selecting means and said determining means  
determines that the input image is a color image.

47. (Currently Amended) An image processing apparatus comprising:  
input means for inputting an image that is a color image or a monochrome  
image;

selecting means for selecting a recording mode from among a first recording mode for unconditionally decimating the image input by said input means and recording the image on a recording material, a second recording mode for referring to images of pixels surrounding a given pixel of the image input by said input means, decimating the image in a manner such that whether a given pixel is deleted is based on the surrounding pixels that have been referred to, and recording the image on the recording material, and a third recording mode for recording the image input by said input means on the recording material without decimating the image;

determining means for determining if the input image is a color image or a monochrome image; and

control means for changing to the third recording mode, when one of the first and second recording modes is selected by said selecting means, and said determining means determines that the input image is a color image.

48. (Currently Amended) An image processing apparatus comprising:  
input means for inputting an image that is a color image or a monochrome image;

selecting means for selecting a recording mode from among a first recording mode for unconditionally decimating the image input by said inputting means and recording the image on a recording material, a second recording mode for referring to images of pixels surrounding a given pixel of the image input by said inputting means, decimating the image in a manner such that whether a given pixel is deleted is based on the surrounding pixels that have been referred to, and recording the image on the recording

material, and a third recording mode for recording the image input by said inputting means on the recording material without decimating the image;

determining means for determining whether the input image is a monochrome image or a color image, and if a monochrome image, whether the monochrome image is a character image or a halftone image; and  
control means for changing to the second recording mode, when the first recording mode is selected by said selecting means, and said determining means determines that the monochrome image is a halftone image.

49. (Currently Amended) An image processing method comprising:  
an inputting step, of inputting an image that is a color image or a monochrome image;

an image processing step, of generating recording image data based on the input image, the image processing step including generating any of first recording image data, for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

a selecting step, of an operator selecting a recording mode from among a normal recording mode, for recording the first recording image on a recording material at a predetermined recording density data, and a decimation recording mode, for recording the second recording image on the recording material at a recording density lower than that of the normal recording mode data;

a determining step, of determining if the input image is a color image or a monochrome image; and

a controlling step, of changing to the normal recording mode, when the decimation recording mode is selected in said selecting step and it is determined in said determining step that the input image is a color image.

50. (Currently Amended) An image processing apparatus comprising:  
inputting means for inputting an image that is a color image or a monochrome image;

selecting means for selecting a recording mode from among a first recording mode for unconditionally decimating the image input by said input means and recording the image on a recording material, a second recording mode for referring to images of pixels surrounding a given pixel of the image input by said input means, decimating the image in a manner such that whether a given pixel is deleted is based on the surrounding pixels that have been referred to, and recording the image on the recording material, and a third recording mode for recording the image input by said input means on the recording material without decimating the image;

determining means for determining if the input image is a color image or a monochrome image; and

controlling means for changing to the third recording mode, when one of the first and second recording modes is selected by said selecting means, and said determining means determines that the input image is a color image.

51. (Currently Amended) An image processing method comprising:

an inputting step, of inputting an image that is a color image or a monochrome image;

a selecting step, of selecting a recording mode from among a first recording mode for unconditionally decimating the image input in said inputting step and recording the image on a recording material, a second recording mode for referring to images of pixels surrounding a given pixel of the image input in said inputting step, decimating the image in a manner such that whether a given pixel is deleted is based on the surrounding pixels that have been referred to, and recording the image on the recording material, and a third recording mode for recording the image input in said inputting step on the recording material without decimating the image;

a determining step of determining whether the input image is a monochrome image or a color image, and if a monochrome image, whether the monochrome image is a character image or a halftone image; and

a controlling step, of changing to the second recording mode, when the first recording mode is selected in said selecting step, and it is determined in said determining step that the monochrome image is a halftone image.

52. (Currently Amended) A computer readable medium having recorded thereon executable codes for implementing a computer implementable image processing method comprising:

an inputting step, of inputting an image that is a color image or a monochrome image;

an image processing step, of generating recording image data based on the input image, the image processing step including generating any of first recording image data, for recording the image on a recording material at a predetermined recording density, and second recording image data for recording the image on a recording material at a recording density lower than that of the first recording image data, by reducing the number of recording dots;

a selecting step, of an operator selecting a recording mode from among a normal recording mode, for recording the first recording image on a recording material at a predetermined recording density data, and a decimation recording mode, for recording the second recording image on the recording material at a recording density lower than that of the normal recording mode data;

a determining step, of determining if the input image is a color image or a monochrome image; and

a controlling step, of changing to the normal recording mode, when the decimation recording mode is selected in said selecting step and it is determined in said determining step that the input image is a color image.

53. (Currently Amended) A computer readable medium having recorded thereon executable codes for implementing a computer implementable image processing method comprising:

an inputting step, of inputting an image that is a color image or a monochrome image;

a selecting step, of selecting a recording mode from among a first recording mode for unconditionally decimating the image input in said input step and recording the image on a recording material, a second recording mode for referring to images of pixels surrounding a given pixel of the image input in said input step, decimating the image in a manner such that whether a given pixel is deleted is based on the surrounding pixels that have been referred to, and recording the image on the recording material, and a third recording mode for recording the image input in said input step on the recording material without decimating the image;

a determining step, of determining if the input image is a color image or a monochrome image; and

a controlling step, of changing to the third recording mode, when one of the first and second recording modes is selected in said selecting step, and it is determined in said determining step that the input image is a color image.

54. (Currently Amended) A computer readable medium having recorded thereon executable codes for implementing a computer implementable image processing method comprising:

an inputting step, of inputting an image that is a color image or a monochrome image;

a selecting step, of selecting a recording mode from among a first recording mode for unconditionally decimating the image input in said inputting step and recording the image on a recording material, a second recording mode for referring to images of pixels surrounding a given pixel of the image input in said inputting step, decimating the

image in a manner such that whether a given pixel is deleted is based on the surrounding pixels that have been referred to, and recording the image on the recording material, and a third recording mode for recording the image input in said inputting step on the recording material without decimating the image;

a determining step, of determining whether the input image is a monochrome image or a color image, and if a monochrome image, whether the monochrome image is a character image or a halftone image; and

a controlling step, of changing to the second recording mode, when the first recording mode is selected in said selecting step, and it is determined in said determining step that the monochrome image is a halftone image.